

## AMENDMENTS TO THE CLAIMS

1. (Original ) A method, comprising:

a) providing an apparatus, comprising an optical fiber having an axis, the optical fiber comprising a solid outer cladding region and a core region, the cladding region surrounding the core region, wherein the core region contains a plurality of holes elongated in the direction of the axis; then

b) introducing an optically active material into at least one hole, wherein the optically active material is adsorbed on an interior surface of the hole; then

c) propagating a laser beam into the optical fiber; then

d) detecting the interaction of the laser beam with the material adsorbed on the interior surface of the hole.

2. (Original ) The method ~~apparatus~~ of claim 1, wherein the optically active material is a Raman active material.

3. (Original ) The method ~~apparatus~~ of claim 1, wherein the optically active material is a infrared active material.

4. (Original ) The method ~~apparatus~~ of claim 1, wherein the optically active material is a biothreat material

5. (Original ) The method ~~apparatus~~ of claim 4, wherein the optically active material is a bacterium.

6.(Original ) The method ~~apparatus~~ of claim 4, wherein the optically active material is a nerve

gas molecule.

7. (Original ) The method ~~apparatus~~ of claim 1, wherein the optically active material is a pollutant material.

8. (Original ) The apparatus of claim 7, wherein the optically active material is carbon monoxide.

9. (Original ) The method ~~apparatus~~ of claim 7, wherein the optically active material is a nitrogen oxide.

10. (Original ) An apparatus, comprising;  
an optical fiber having an axis, the optical fiber comprising a solid outer cladding region and a core region, the cladding region surrounding the core region, wherein the core region contains a plurality of holes elongated in the direction of the axis, and wherein at least one hole contains optically active material adsorbed on the interior surface of the hole.

~~11. 12.~~ (Original ) The apparatus of claim 10, wherein the optically active material is a Raman active material.

~~12. 13.~~ (Original ) The apparatus of claim 10, wherein the optically active material is a infrared active material.

~~13. 14.~~ (Original ) The apparatus of claim 10, wherein the optically active material is a biothreat material.

~~14. 15.~~ (Original ) The apparatus of claim ~~13. 14.~~ , wherein the optically active material is a bacterium.

1 ~~15.16~~:(Original ) The apparatus of claim ~~13 14~~, wherein the optically active material is a nerve  
2 gas molecule.

1 ~~16.17~~:(Original ) The apparatus of claim 10, wherein the optically active material is a pollutant  
2 material.

1 ~~17. 18~~:(Original ) The apparatus of claim ~~16 17~~ , wherein the optically active material is carbon  
2 monoxide.

1 ~~18. 19~~:(Original ) The apparatus of claim ~~16 17~~, wherein the optically active material is a  
2 nitrogen oxide.

1 ~~19. 20~~:(Original ) A system, comprising;  
2 an optical fiber having an axis, the optical fiber comprising a solid outer cladding region and a  
3 core region, the cladding region surrounding the core region, wherein the core region  
4 contains a plurality of holes elongated in the direction of the axis, and wherein at least  
5 one hole contains optically active material adsorbed on the interior surface of the hole;  
6 a laser apparatus for introducing laser pump light into the fiber;  
7 optical apparatus for removing light from the fiber; and  
8 control means for controlling the laser apparatus.